Weston Solutions, Inc.
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www.westonsolutions.com

October 9, 2017

Mr. Martin McComb
On-Scene Coordinator
United States Environmental Protection Agency, Region VIII
Mail Code: 8EPR-ER
1595 Wynkoop Street
Denver, CO 80202

Re: Manweiler Trucking Spill
Colorado Springs, El Paso County, Colorado
TDD: 0002/1608-11
DCN: W0404.1A.01132
WO#: 20408.012.002.0404.00

Dear Mr. McComb:

The United States Environmental Protection Agency (EPA) tasked the Weston Solutions, Inc., (WESTON®) Superfund Technical Assessment and Response Team (START) under Technical Direction Document (TDD) 0002/1608-11 to support EPA's emergency response at the Manweiler Tanker Spill in Colorado Springs, El Paso County, Colorado. The response was initiated on August 26, 2016 to determine immediate threats to human health and the environment from a tanker truck roll over, located in Colorado Springs, Colorado (the Site). Figures are provided in Attachment A. Photo documentation is provided in Attachment B. Laboratory reports are provided in Attachment C.

SITE DESCRIPTION

The Site (North 38.821436˚, West and -104.837336˚) is located in primarily commercial property (car dealerships) in Colorado Springs, Colorado (Attachment A, Figure 1). The spill occurred near 911 Motor City Drive in Colorado Springs, El Paso County, Colorado (Attachment A, Figure 2). The resulting release into Fountain Creek continued downstream to mile marker 110 on I-25 South.

BACKGROUND

On August 26, 2016, the Colorado Springs Fire Department (CSFD) reported a roll-over accident involving a fuel tanker belonging to Manweiler Transport. The accident happened at approximately 04:00 near 911 Motor City Drive in Colorado Springs, El Paso County, Colorado. CSFD estimated approximately 6000 gallons of unleaded gasoline, and 2000 gallons of diesel fuel were released. CSFD reported that all but a few hundred gallons of this released material had entered into a nearby storm drain. The storm drain empties into Bear Creek just above the confluence with Fountain Creek. Colorado Parks and Wildlife reported that the fuel spill caused a fish kill on Fountain Creek.

RESPONSE ACIVITIES

On August 26, 2016, START personnel Eric Sandusky and Ellie Kastner mobilized from Denver, Co to the site located in Colorado Springs, Co. START met EPA OSC Martin McComb at the spill site. EPA and START met with CSFD Battalion Chief Michael Dalton, and cleanup contractor Belfore representative Drew Higgins to discuss current and future containment and clean up activities. At 10:30, OSC McComb requested two additional START members, the Oil Spill trailer, and other equipment to help with the documentation and sampling events. At 10:55 START Kastner departed the site to begin sampling the farm side of the intakes along Fountain Creek. START Sandusky and OSC McComb mobilized to the boom locations downstream to document cleanup activities. START personnel Joe Rudi and Cordel Schmidt arrived on site at 14:10. START Schmidt departs the spill site for the boom location at mile marker 110 on I-25 south. START Schmidt was tasked to document, and relay boom deployment information to OSC McComb. START Rudi was tasked with walking Fountain Creek to document sheen, odors, and GPS locations along the creek. START Sandusky remained at the spill site to document clean up procedures.

On August 27, 2016 START personnel were tasked with collecting samples from the river side of the six (6) intake gates sampled on August 26, 2016. These sample results would be used to document water quality status and conditions of the creek prior to opening the intake gates. START also collected samples from the boom deployment locations. Samples were analyzed for Gasoline Range Organics (GRO), and Diesel Range Organics (DRO) at the SGS/Accutest laboratory in Denver, CO. The sample results are listed in **Table 1** below, and the lab analysis report can be found in **Attachment C**.

Sample ID	GRO(mg/L)	DRO(mg/L)
TS-SW-01-20160826	314000	560000
TS-SW-02-20160826	1.48	1
TS-SW-03-20160826	ND	ND
TS-SW-04-20160826	0.183	3.27
TS-SW-05-20160826	ND	ND
TS-SW-06-20160826	ND	ND
TS-SW-07-20160826	ND	ND
TS-SW-01-20160827	0.182	0.226
TS-SW-03-20160827	ND	ND
TS-SW-03-20160827-D	0.0552	ND
TS-SW-04-20160827	0.0538	ND
TS-SW-05-20160827	ND	ND
TS-SW-05-20160827-D	ND	ND
TS-SW-06-20160827	ND	ND
TS-SW-07-20160827	ND	ND
TS-SW-07-20160827-02	ND	0.343
TS-SW-08-20160827	ND	0.256
TS-SW-B1-20160827	ND	ND
TS-SW-B2-20160827	ND	ND

Table 1. Sample Results

START demobilized from the site on 08/27/2016. START delivered the samples to the SGS/Accutest laboratory on 08/29/2016. A 24-hour turn-around time was requested for the sample results as instructed by OSC Mc Comb.

If there are any questions or comments regarding this report, please do not hesitate to contact me at eric.sandusky@westonsolutions.com or 303-729-6100.

Very truly yours,
WESTON SOLUTIONS, INC.

Eric Sandusky
START Project Leader

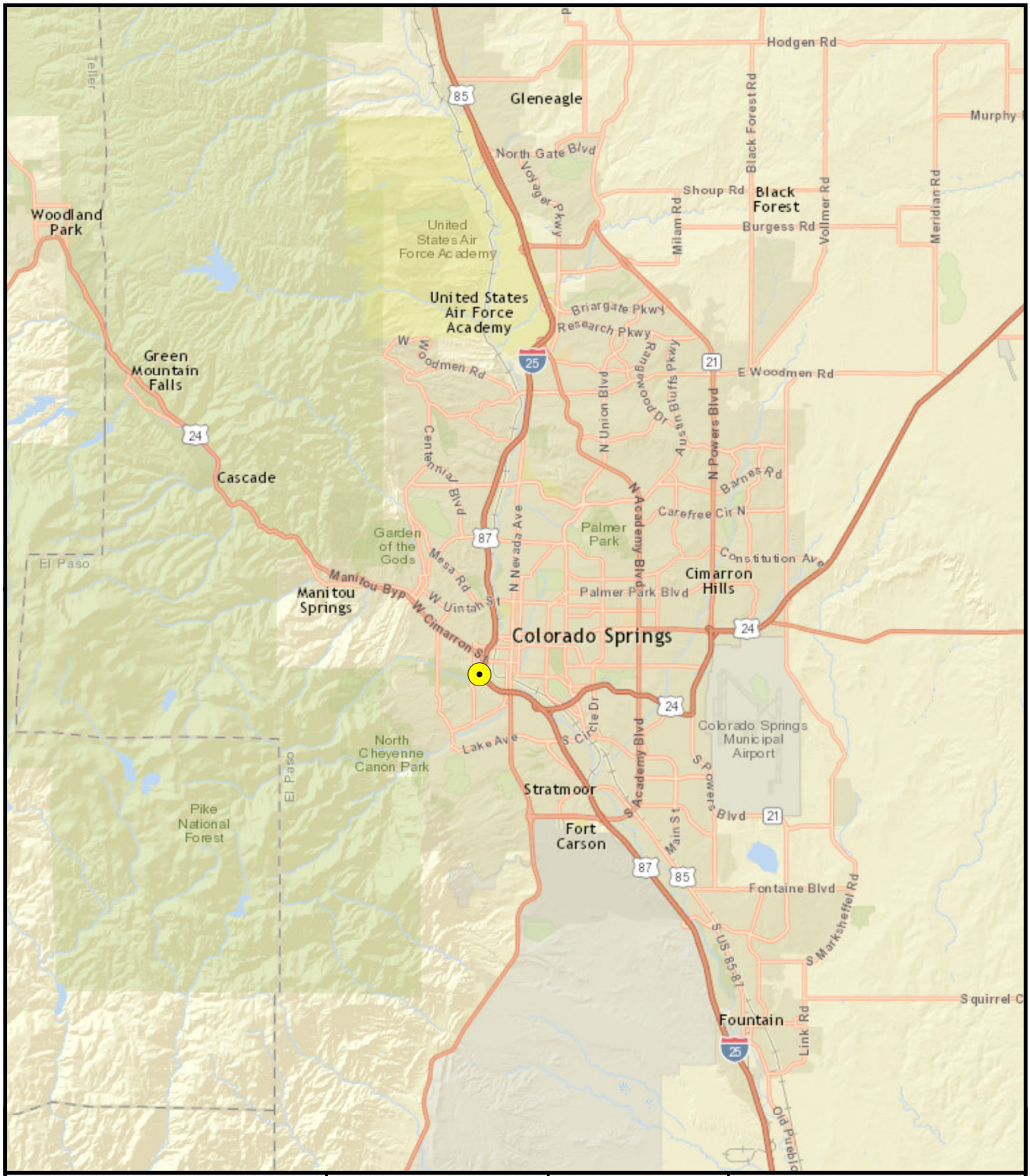
Attachments:

A – Figures
B – Photographic Log
C – Laboratory Report

cc: Robert Reed, Project Manager
START DCN File

Attachment A

Figures



Legend

- Site Location

0 1.75 3.5 7 Miles

N

Prepared for:
U.S. EPA Region 8

Contract No.:
EP-S8-13-01

TDD:
1608-11

TO:
0002

The source of this map image is Esri, used by EPA with Esri's permission

Prepared By:
Weston Solutions, Inc.
START IV

Suite 100
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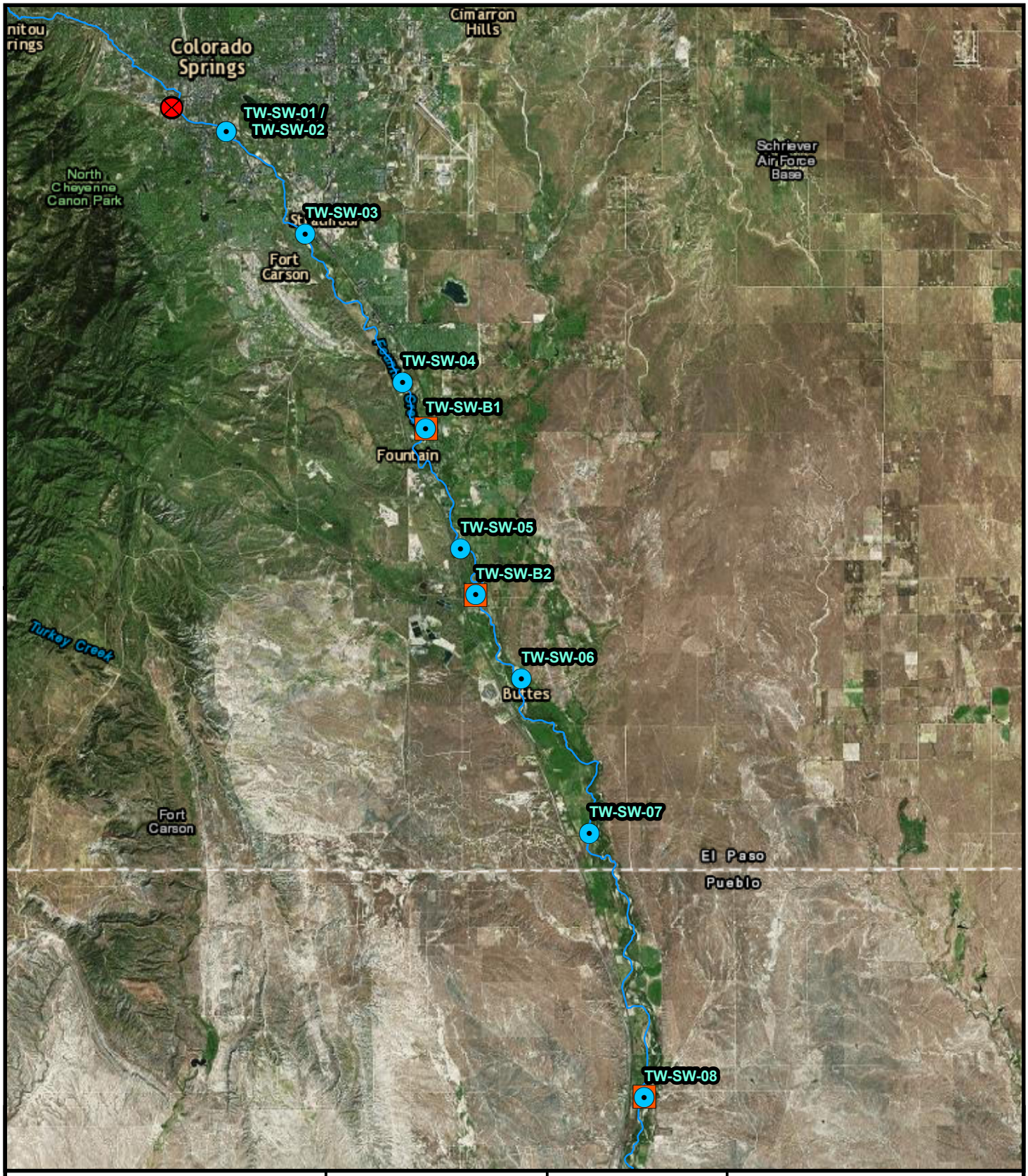
Lakewood, CO 80215

FIGURE 1
SITE LOCATION MAP
MANWEILER TRUCKING SPILL
COLORADO SPRINGS, COLORADO

Date: 9/21/2016



Legend

- Spill Location
- Sample Location
- Boom Location
- River

0 1.75 3.5 7 Miles

N

Prepared for:
U.S. EPA Region 8

Contract No.:
EP-S8-13-01

TDD:
1608-11

TO:
0002

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Prepared By:
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FIGURE 2
RESPONSE ACTIVITIES MAP
MANWEILER TRUCKING SPILL
COLORADO SPRINGS, COLORADO

Date: 9/21/2016

Attachment B

Photographic Log

Manweiler Trucking Spill

Photo Log

Description: View of where the tanker truck overturned on Motor City Drive. Tanker overturned at approximately 4 am on August 26, 2016 with approximately 6,000 gallons of gasoline and 2,000 gallons of diesel fuel.

Category: Spill Site
Latitude: 38.8214138888889
Date Taken: 8/26/2016
Longitude: -104.837791666667
Tags: Assessment

Description: View of berms placed on Motor City Drive to capture remnant gasoline and diesel spilled from overturned tanker prior to the contaminants reaching the storm sewer.

Category: Spill Site
Latitude: 38.8213222222222
Date Taken: 8/26/2016
Longitude: -104.837058333333
Tags: Removal

Description: Clean up contractor, Belfor, using a vac-truck to suck up contaminants which were collected by one of four berms set up on Motor City Drive.

Category: Spill Site
Latitude: 38.8208777777778
Date Taken: 8/26/2016
Longitude: -104.836975
Tags: Removal

Description: Belfor contractors “jetting” stormwater sewer in order to wash the contaminants from the sewer.

Category: Spill Site
Latitude: 38.8210972222222
Date Taken: 8/26/2016
Longitude: -104.836044444444
Tags: Removal

Manweiler Trucking Spill

Photo Log

Description: Storm Water Drain number 2 located east of the spill area behind the nearby car dealership. Photo taken post cleanout. Note the caution tape. The hole has been temporarily covered with plywood. No visible sheen post cleanout.

Category: Spill Site
Latitude: 38.8218366666667
Date Taken: 8/26/2016
Longitude: -104.836555
Tags: Post Removal

Description: Outfall of the stormwater sewer into Bear Creek near the overturned tanker. Water flows away from the camera, through the highway culvert and into Fountain Creek.

Category: Spill Site
Latitude: 38.8224638888889
Date Taken: 8/26/2016
Longitude: -104.836647222222
Tags: Assessment

Description: Sheen coming from the outfall of the stormwater sewer and into Bear Creek.

Category: Spill Site
Latitude: 38.8225166666667
Date Taken: 8/26/2016
Longitude: -104.836630555556
Tags: Assessment

Description: Absorbent tubes placed in Bear Creek just downstream of the stormwater sewer and on the other side of the I25 highway culvert.

Category: Spill Site
Latitude: 38.8225638888889
Date Taken: 8/26/2016
Longitude: -104.836661111111
Tags: Removal

Manweiler Trucking Spill

Photo Log

Description: Secondary absorbent tubes placed in Bear Creek just downstream of the stormwater sewer discharge on the downstream end of the I25 highway culvert. Belfor contractor is using a vac-truck to remove contaminants from the creek.

Category: Spill Site
Latitude: 38.8225861111111
Date Taken: 8/26/2016
Longitude: -104.836088888889
Tags: Removal

Description: Absorbent tubes on Bear Creek before confluence with Fountain Creek. Response contractor continued to monitor and observe this area, switching out tubes when needed.

Category: Spill Site
Latitude: 38.8226166666667
Date Taken: 8/26/2016
Longitude: -104.835465
Tags: Removal

Description: Confluence of Bear Creek and Fountain Creek, no visible sheen or odor on this side of Fountain Creek. Response team is deploying absorbent tubes and removing product using a vacuum truck.

Category: Spill Site
Latitude: 38.8225316666667
Date Taken: 8/26/2016
Longitude: -104.835425
Tags: Removal

Manweiler Trucking Spill

Photo Log

Description: Water and product in front of the closed agricultural water intake near the Las Vegas Waste Water Treatment Facility. Product was approximately 6 inches deep, 15 feet across, and 60 feet long. Photo taken at 1250 on 8/26/2016. Sample TS-SW-01-20160826 was collected from this location. Sample TS-SW-02-20160826 was collected from the opposite side of the gates. The sample did not contain any product.

Category: Las Vegas Diversion
Latitude: 38.8127333333333
Date Taken: 8/26/2016
Longitude: -104.809983333333
Tags: Assessment

Description: Belfor removing diesel product from the agricultural water diversion near the Las Vegas Waste Water Facility.

Category: Las Vegas Diversion
Latitude: 38.812685
Date Taken: 8/26/2016
Longitude: -104.809801666667
Tags: Removal

Description: Water in front of the closed agricultural water intake near the Las Vegas Waste Water Treatment Facility. Photo taken at 1811 on 8/26/2016 after product had been removed.

Category: Las Vegas Diversion
Latitude: 38.8127444444444
Date Taken: 8/26/2016
Longitude: -104.810044444444
Tags: Post Removal

Manweiler Trucking Spill

Photo Log

Description: Product at the agricultural water intake near the Las Vegas Waste Water Treatment Facility. The gates were left closed overnight to collect any sheen and product that continued to flow down stream from the spill site. There is a small amount of product in this image. This product was removed.

Category: Las Vegas Diversion
Latitude: 38.8127583333333
Date Taken: 8/27/2016
Longitude: -104.809958333333
Tags: Removal

Description: Looking down on the East bank. Visible sheen along the slower moving water. No staining on the bank. No odor along the bank but slight odor when you walk away from the river.

Category: River
Latitude: 38.8208933333333
Date Taken: 8/26/2016
Longitude: -104.834468333333
Tags: Assessment

Description: Observation area down river from the confluence and on the east bank of Fountain Creek. Slower moving water with light visible sheen. Inorganic odor is present.

Category: River
Latitude: 38.8207316666667
Date Taken: 8/26/2016
Longitude: -104.833956666667
Tags: Assessment

Description: Previous observation location of 8-26-2016. Slight visible sheen and faint odor near the slower moving water on 8-27-16. No visible staining on the bank. Observation location in on the west side of the Fountain Creek.

Category: River
Latitude: 38.8197527777778
Date Taken: 8/27/2016
Longitude: -104.833047222222
Tags: Post Removal

Manweiler Trucking Spill

Photo Log

Description: Previous observation location of 8-26-2016. Visible sheen and slight odor still present on 8-27-16. No visible staining on the bank. Observation location in on the west side of the Fountain Creek.

Category: River
Latitude: 38.8183111111111
Date Taken: 8/27/2016
Longitude: -104.831436111111
Tags: Post Removal

Description: Previous observation location of 8-26-2016. No visible sheen or odor on 8-27-16. No visible staining on the bank. Observation location in on the west side of the Fountain Creek.

Category: River
Latitude: 38.8177083333333
Date Taken: 8/27/2016
Longitude: -104.830566666667
Tags: Post Removal

Description: Sample Location 01

Category: Sample Location
Latitude: 38.8127277777778
Date Taken: 8/27/2016
Longitude: -104.810438888889
Tags: Assessment

Description: Sampling Location 03

Category: Sample Location
Latitude: 38.7722444444444
Date Taken: 8/27/2016
Longitude: -104.770583333333
Tags: Assessment

Manweiler Trucking Spill

Photo Log

Description: Sample Location 04
Category: Sample Location
Latitude: 38.7134166666667
Date Taken: 8/26/2016
Longitude: -104.720633333333
Tags: Assessment

Description: Sample Location 05
Category: Sample Location
Latitude:
Date Taken: 8/27/2016
Longitude:
Tags: Assessment

Description: Sample Location 06
Category: Sample Location
Latitude:
Date Taken: 8/27/2016
Longitude:
Tags: Assessment

Description: Sample Location 07
Category: Sample Location
Latitude:
Date Taken: 8/27/2016
Longitude:
Tags: Assessment

Description: START obtaining water sample from flow control structure along Fountain Creek where the second boom was located.
Category: Sample Location
Latitude: 38.629241
Date Taken: 8/27/2016
Longitude: -104.683839
Tags: Sampling

Manweiler Trucking Spill

Photo Log

Description: Precautionary boom was deployed by the Fountain Fire Department near 323 Grinde Drive (Boom 1) at approximately 1100 on August 26. The Federal On Scene Coordinator (FOSC) had this boom removed as only a moderate amount of sheen was witnessed at this location.

Category: Fountain Boom
Latitude: 38.6946555555555
Date Taken: 8/26/2016
Longitude: -104.709341666667
Tags: Removal

Description: Pueblo County Fire and Sheriff Departments constructing boom 3 on Fountain Creek near Piñon Bridge and I25 mile marker 110. The FOSC directed the responders to stop excavating in the river channel and eventually halted the boom deployment due to safety concerns, the unlikelihood of product reaching this location and the overall inability of boom to collect sheen.

Category: Pueblo Boom
Latitude: 38.429656
Date Taken: 8/26/2016
Longitude: -104.59811
Tags: Removal

Description: Boom the morning after the FOSC halted its deployment and before it was retrieved. Sample TS-SW-08-20160827 was collected at this location.

Category: Pueblo Boom
Latitude: 38.429656
Date Taken: 8/27/2016
Longitude: -104.59811
Tags: Removal

Attachment C

Laboratory Report

e-Hardcopy 2.0
Automated Report

Technical Report for

Weston Solutions, Inc.

Manweiler Tanker

SGS Accutest Job Number: D86229

Sampling Dates: 08/26/16 - 08/27/16

Report to:

ellie.kastner@westonsolutions.com

Total number of pages in report: **68**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Scott Heideman
Laboratory Director

Client Service contact: Renea Lewis 303-425-6021

Certifications: CO (CO00049), ID (CO00049), NE (NE-OS-06-04), ND (R-027), NJ (CO007), OK (D9942) UT (NELAP CO00049), LA (LA150028), TX (T104704511), WY (8TMS-L)

DATA VALIDATION REPORT

Manweiler Tanker

SAMPLE DELIVERY GROUP: D86229

Prepared by

MEC^X
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Manweiler Tanker
Contract Task Order:	20408.012.002.0404.00
Sample Delivery Group:	D86229
Weston Project Manager:	Robert Reed
Matrix:	oil/water
QC Level:	Stage 2A
No. of Samples:	19
No. of Reanalyses/Dilutions:	0
Laboratory:	SGS Accutest

Table 1. Sample Identification

Sample Name	*Lab Sample Name*	*Matrix Type*	*Collection Date*	*Method*
TS-SW-01-20160826	D86229-1A	Oil	08/26/16	8015B
TS-SW-01-20160827	D86229-18	Water	08/27/16	8015B
TS-SW-02-20160826	D86229-2	Water	08/26/16	8015B
TS-SW-03-20160826	D86229-3	Water	08/26/16	8015B
TS-SW-03-20160827	D86229-16	Water	08/27/16	8015B
TS-SW-03-20160827-D	D86229-17	Water	08/27/16	8015B
TS-SW-04-20160826	D86229-4	Water	08/26/16	8015B
TS-SW-04-20160827	D86229-15	Water	08/27/16	8015B
TS-SW-05-20160826	D86229-5	Water	08/26/16	8015B
TS-SW-05-20160827	D86229-13	Water	08/27/16	8015B
TS-SW-05-20160827-D	D86229-14	Water	08/27/16	8015B
TS-SW-06-20160826	D86229-6	Water	08/26/16	8015B
TS-SW-06-20160827	D86229-11	Water	08/27/16	8015B
TS-SW-07-20160826	D86229-7	Water	08/26/16	8015B
TS-SW-07-20160827	D86229-9	Water	08/27/16	8015B
TS-SW-07-20160827-02	D86229-10	Water	08/27/16	8015B
TS-SW-08-20160827	D86229-8	Water	08/27/16	8015B
TS-SW-B1-20160827	D86229-19	Water	08/27/16	8015B
TS-SW-B2-20160827	D86229-12	Water	08/27/16	8015B

II. Sample Management

The samples were received within the temperature limits of 4°C ±2°C. The sample containers were received intact. The chain-of-custody (COC) was appropriately signed and dated by field and laboratory personnel; however, corrections to the COC were made by obliterating rather than lining out the original entry, and were not initialed or dated. The laboratory's cooler receipt form indicated custody seals were present and intact on the cooler. The COC listed the sample matrix as surface water (SW); however, the laboratory extracted and reported the oil matrix of sample TS-SW-01-20160826 as a solid.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
J+	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias.
J-	Not applicable	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential negative bias.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.

Qualifier	Organics	Inorganics
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995 or calibration was noncompliant.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
L1	LCS/LCSD RPD was outside control limits.	LCS/LCSD RPD was outside control limits.
Q	MS/MSD recovery was poor.	MS recovery was poor.
Q1	MS/MSD RPD was outside control limits.	MS/MSD RPD was outside control limits.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	ICPMS tune was not compliant.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
F1	Field duplicate results were outside the control limit.	Field duplicate results were outside the control limit.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualifier	Organics	Inorganics
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analysis

1. EPA METHOD 8015B—TPH-GRO and TPH-DRO

Reviewed By: L. Calvin
Date Reviewed: September 9, 2016

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *Quality Assurance Project Plan for U. S. EPA Region 8 CERCLA Site Assessment* (7/13), *EPA Method 8015B*, and the *National Functional Guidelines for Superfund Organic Methods Data Review* (2014).

- Holding Times: Analytical holding times were met. The oil and water samples were analyzed within 14 days of collection for GRO. The oil sample for DRO was extracted within 14 days of collection and the water samples were extracted within seven days of collection. The DRO samples were analyzed within 40 days of extraction.

- Calibration: Review is not applicable at a Stage 2A validation.

- Blanks: The method blanks had no GRO or DRO range detects above the MDL.

- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory control limits of 70-130% for GRO and 35-130% (solid/oil matrix) and 22-130% (aqueous) for DRO.

- Surrogate Recovery: The surrogate recovery was not evaluated in a sample analyzed at a dilution of 10× or greater. Remaining recoveries were within the laboratory control limits of 60-140% for GRO and 41-134% (solid/oil matrix) and 11-142% (aqueous) for DRO.

- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed for both GRO and DRO on sample TS-SW-05-20160827, and on oil matrix sample TS-SW-01-20160826 for DRO. Recoveries and RPDs for the MS/MSD analyses of sample TS-SW-05-20160827 were within the laboratory control limits of 20-130% and ≤30%, respectively, for DRO. Recoveries were within the laboratory control limits of 64-138% for GRO; however, the RPD exceeded the control limit of ≤30% at 40%. The nondetected parent sample result for GRO was qualified as estimated (UJ). The parent sample concentration of DRO in sample TS-SW-01-20160826 exceeded 4× the spiked concentration; therefore, recoveries and the RPD were not evaluated.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Trip Blanks: This SDG had no identified trip blank.

    - Field Blanks and Equipment Blanks: This SDG had no identified field blank or equipment blank samples.

- Field Duplicates: Samples TS-SW-03-20160827/TS-SW-03-20160827-D and TS-SW-05-20160827/TS-SW-05-20160827-D were identified as field duplicate samples for both GRO and DRO analyses.

  Sample TS-SW-03-20160827 was nondetected for GRO, and TS-SW-03-20160827-D had a detect just above the reporting limit (RL) of 0.05 mg/L at 0.0552. The results were within the reasonable control limit of ±RL. Samples TS-SW-05-20160827 and TS-SW-05-20160827-D were both nondetected for GRO. Both pairs were considered to be in good agreement.

  All of the field duplicate samples for DRO were nondetected for DRO. Both pairs were considered to be in good agreement.

- Compound Identification: Compound identification is not verified at a Stage 2A validation. The laboratory analyzed for TPH-GRO (gasoline range C6-C10) and TPH-DRO (diesel range C10-C28) by Method 8015B.

- Compound Quantification and Reported Detection Limits: Compound quantification is not verified at a Stage 2A validation. The laboratory did not report values below the reporting limit; although, MDLs were reported as associated with the sample data. The reported nondetects are valid to the reporting limit. The reviewer noted that for GRO, the reporting limit was identical to the reported MDL. Sample TS-SW-01-20160826 was analyzed at a 10× dilution for a high DRO range concentration.

- System Performance: Review of system performance is not applicable at a Stage 2A validation.

Validated Sample Result Forms: D86229

Analysis Method SW8015B

Sample Name TS-SW-07-20160827-02 **Matrix Type:** Water

Lab Sample Name: D86229-10 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.343	0.2	0.18	mg/l			
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sample Name TS-SW-06-20160827 **Matrix Type:** Water

Lab Sample Name: D86229-11 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sample Name TS-SW-B2-20160827 **Matrix Type:** Water

Lab Sample Name: D86229-12 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sample Name TS-SW-05-20160827 **Matrix Type:** Water

Lab Sample Name: D86229-13 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	UJ	Q1

Sample Name TS-SW-05-20160827-D **Matrix Type:** Water

Lab Sample Name: D86229-14 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sample Name TS-SW-04-20160827 **Matrix Type:** Water

Lab Sample Name: D86229-15 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.0538	0.05	0.05	mg/l			

Analysis Method SW8015B

Sample Name TS-SW-03-20160827 **Matrix Type:** Water

Lab Sample Name: D86229-16 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sample Name TS-SW-03-20160827-D **Matrix Type:** Water

Lab Sample Name: D86229-17 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.0552	0.05	0.05	mg/l			

Sample Name TS-SW-01-20160827 **Matrix Type:** Water

Lab Sample Name: D86229-18 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.226	0.2	0.18	mg/l			
TPH-GRO (C6-C10)	T		0.182	0.05	0.05	mg/l			

Sample Name TS-SW-B1-20160827 **Matrix Type:** Water

Lab Sample Name: D86229-19 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sample Name TS-SW-01-20160826 **Matrix Type:** Oil

Lab Sample Name: D86229-1A **Sample Date:** 08/26/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		560000	20000	19000	mg/kg			
TPH-GRO (C6-C10)	T		314000	20000	10000	mg/kg			

Sample Name TS-SW-02-20160826 **Matrix Type:** Water

Lab Sample Name: D86229-2 **Sample Date:** 08/26/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		1	0.2	0.18	mg/l			
TPH-GRO (C6-C10)	T		1.48	0.05	0.05	mg/l			

Sample Name TS-SW-03-20160826 **Matrix Type:** Water

Lab Sample Name: D86229-3 **Sample Date:** 08/26/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments

Analysis Method SW8015B

TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U

Sample Name TS-SW-04-20160826 **Matrix Type:** Water

Lab Sample Name: D86229-4 **Sample Date:** 08/26/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		3.27	0.2	0.18	mg/l			
TPH-GRO (C6-C10)	T		0.183	0.05	0.05	mg/l			

Sample Name TS-SW-05-20160826 **Matrix Type:** Water

Lab Sample Name: D86229-5 **Sample Date:** 08/26/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sample Name TS-SW-06-20160826 **Matrix Type:** Water

Lab Sample Name: D86229-6 **Sample Date:** 08/26/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sample Name TS-SW-07-20160826 **Matrix Type:** Water

Lab Sample Name: D86229-7 **Sample Date:** 08/26/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sample Name TS-SW-08-20160827 **Matrix Type:** Water

Lab Sample Name: D86229-8 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.256	0.2	0.18	mg/l			
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sample Name TS-SW-07-20160827 **Matrix Type:** Water

Lab Sample Name: D86229-9 **Sample Date:** 08/27/16

Analyte	Total/Dissolved	CAS No	Result Value	Reporting Limit	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Qualifier Comments
TPH-DRO (C10-C28)	T		0.2	0.2	0.18	mg/l	U	U	
TPH-GRO (C6-C10)	T		0.05	0.05	0.05	mg/l	U	U	

Sections: 1 2 3 4 5 6 7

Table of Contents

Sample Summary

Weston Solutions, Inc.

Manweiler Tanker

Job No: D86229

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D86229-1A	08/26/16	11:50	EKES	08/29/16	SO	Oil	TS-SW-01-20160826
D86229-2	08/26/16	12:20	EKES	08/29/16	AQ	Surface Water	TS-SW-02-20160826
D86229-3	08/26/16	14:40	EKES	08/29/16	AQ	Surface Water	TS-SW-03-20160826
D86229-4	08/26/16	16:10	EKES	08/29/16	AQ	Surface Water	TS-SW-04-20160826
D86229-5	08/26/16	18:05	EKES	08/29/16	AQ	Surface Water	TS-SW-05-20160826
D86229-6	08/26/16	20:15	EKES	08/29/16	AQ	Surface Water	TS-SW-06-20160826
D86229-7	08/26/16	19:05	EKES	08/29/16	AQ	Surface Water	TS-SW-07-20160826
D86229-8	08/27/16	07:50	EKES	08/29/16	AQ	Surface Water	TS-SW-08-20160827
D86229-9	08/27/16	08:45	EKES	08/29/16	AQ	Surface Water	TS-SW-07-20160827
D86229-10	08/27/16	09:00	EKES	08/29/16	AQ	Surface Water	TS-SW-07-20160827-02
D86229-11	08/27/16	10:55	EKES	08/29/16	AQ	Surface Water	TS-SW-06-20160827
D86229-12	08/27/16	11:30	EKES	08/29/16	AQ	Surface Water	TS-SW-B2-20160827
D86229-13	08/27/16	11:16	EKES	08/29/16	AQ	Surface Water	TS-SW-05-20160827

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Summary
(continued)

Weston Solutions, Inc.

Job No: D86229

Manweiler Tanker

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D86229-13M	08/27/16	11:16	EKES	08/29/16	AQ	Water Matrix Spike	TS-SW-05-20160827
D86229-13S	08/27/16	11:16	EKES	08/29/16	AQ	Water Dup/MSD	TS-SW-05-20160827
D86229-14	08/27/16	11:35	EKES	08/29/16	AQ	Surface Water	TS-SW-05-20160827-D
D86229-15	08/27/16	10:27	EKES	08/29/16	AQ	Surface Water	TS-SW-04-20160827
D86229-16	08/27/16	10:27	EKES	08/29/16	AQ	Surface Water	TS-SW-03-20160827
D86229-17	08/27/16	10:26	EKES	08/29/16	AQ	Surface Water	TS-SW-03-20160827-D
D86229-18	08/27/16	09:35	EKES	08/29/16	AQ	Surface Water	TS-SW-01-20160827
D86229-19	08/27/16	10:52	EKES	08/29/16	AQ	Surface Water	TS-SW-B1-20160827

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Weston Solutions, Inc. **Job No** D86229

Site: Manweiler Tanker **Report Date** 8/31/2016 3:47:38 PM

On 08/29/2016, 19 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 5.3 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D86229 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8015B

Matrix: AQ **Batch ID:** GGB1860

- All samples were analyzed within the recommended method holding time.
- Sample(s) D86174-1MS, D86174-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Matrix: AQ **Batch ID:** GGB1861

- All samples were analyzed within the recommended method holding time.
- Sample(s) D86229-13MS, D86229-13MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- The RPD(s) for the MS and MSD recoveries of TPH-GRO (C6-C10) are outside control limits for sample D86229-13MSD. High RPD due to possible sample nonhomogeneity.

Matrix: SO **Batch ID:** GGA1739

- All samples were analyzed within the recommended method holding time.
- Sample(s) D86106-2MS, D86106-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

Extractables by GC By Method SW846-8015B

Matrix: AQ **Batch ID:** OP14012

- All samples were extracted and analyzed within the recommended method holding time.
- Sample(s) D86229-13MS, D86229-13MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D86229-1A, OP14009-MS, OP14009-MSD have surrogates outside control limits. Probable cause due to matrix interference.

Matrix: SO **Batch ID:** OP14009

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D86229-1AMSD, D86229-1AMS, D86229-1AMSD were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) of TPH-DRO (C10-C28) are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- Sample(s) D86229-1A, OP14009-MS, OP14009-MSD have surrogates outside control limits. Probable cause due to matrix interference.
- D86229-1A for o-Terphenyl: Outside control limits due to dilution.
- OP14009-MS for o-Terphenyl: Outside control limits due to dilution.
- OP14009-MSD for o-Terphenyl: Outside control limits due to dilution.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D86229
Account: Weston Solutions, Inc.
Project: Manweiler Tanker
Collected: 08/26/16 thru 08/27/16

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D86229-1A	**TS-SW-01-20160826**					
TPH-GRO (C6-C10)		314000	20000	10000	mg/kg	SW846 8015B
TPH-DRO (C10-C28)		560000	20000	19000	mg/kg	SW846-8015B
D86229-2	**TS-SW-02-20160826**					
TPH-GRO (C6-C10)		1.48	0.050	0.050	mg/l	SW846 8015B
TPH-DRO (C10-C28)		1.00	0.20	0.18	mg/l	SW846-8015B
D86229-3	**TS-SW-03-20160826**					
No hits reported in this sample.						
D86229-4	**TS-SW-04-20160826**					
TPH-GRO (C6-C10)		0.183	0.050	0.050	mg/l	SW846 8015B
TPH-DRO (C10-C28)		3.27	0.20	0.18	mg/l	SW846-8015B
D86229-5	**TS-SW-05-20160826**					
No hits reported in this sample.						
D86229-6	**TS-SW-06-20160826**					
No hits reported in this sample.						
D86229-7	**TS-SW-07-20160826**					
No hits reported in this sample.						
D86229-8	**TS-SW-08-20160827**					
TPH-DRO (C10-C28)		0.256	0.20	0.18	mg/l	SW846-8015B
D86229-9	**TS-SW-07-20160827**					
No hits reported in this sample.						
D86229-10	**TS-SW-07-20160827-02**					
TPH-DRO (C10-C28)		0.343	0.20	0.18	mg/l	SW846-8015B

Summary of Hits

Job Number: D86229
Account: Weston Solutions, Inc.
Project: Manweiler Tanker
Collected: 08/26/16 thru 08/27/16

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D86229-11	**TS-SW-06-20160827**					
No hits reported in this sample.						
D86229-12	**TS-SW-B2-20160827**					
No hits reported in this sample.						
D86229-13	**TS-SW-05-20160827**					
No hits reported in this sample.						
D86229-14	**TS-SW-05-20160827-D**					
No hits reported in this sample.						
D86229-15	**TS-SW-04-20160827**					
TPH-GRO (C6-C10)		0.0538	0.050	0.050	mg/l	SW846 8015B
D86229-16	**TS-SW-03-20160827**					
No hits reported in this sample.						
D86229-17	**TS-SW-03-20160827-D**					
TPH-GRO (C6-C10)		0.0552	0.050	0.050	mg/l	SW846 8015B
D86229-18	**TS-SW-01-20160827**					
TPH-GRO (C6-C10)		0.182	0.050	0.050	mg/l	SW846 8015B
TPH-DRO (C10-C28)		0.226	0.20	0.18	mg/l	SW846-8015B
D86229-19	**TS-SW-B1-20160827**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	TS-SW-01-20160826		
Lab Sample ID:	D86229-1A	**Date Sampled:**	08/26/16
Matrix:	SO - Oil	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA34493.D	1	08/30/16	AK	n/a	n/a	GGA1739
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	0.010 g	10.0 ml	50.0 ul
Run #2			

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	314000	20000	10000	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	120%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-01-20160826		
Lab Sample ID:	D86229-1A	**Date Sampled:**	08/26/16
Matrix:	SO - Oil	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3580A	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43679.D	10	08/31/16	GN	08/30/16	OP14009	GFI1917
Run #2							

	Initial Weight	Final Volume
Run #1	1.0 g	10.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	560000	20000	19000	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	209% [a]		41-134%

(a) Outside control limits due to dilution.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-02-20160826		
Lab Sample ID:	D86229-2	**Date Sampled:**	08/26/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36414.D	1	08/29/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	1.48	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	108%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TS-SW-02-20160826
Lab Sample ID: D86229-2
Matrix: AQ - Surface Water
Method: SW846-8015B SW846 3510C
Project: Manweiler Tanker

Date Sampled: 08/26/16
Date Received: 08/29/16
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43648.D	1	08/30/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	1.00	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	67%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-03-20160826		
Lab Sample ID:	D86229-3	**Date Sampled:**	08/26/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36415.D	1	08/29/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-03-20160826		
Lab Sample ID:	D86229-3	**Date Sampled:**	08/26/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43650.D	1	08/30/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	65%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-04-20160826		
Lab Sample ID:	D86229-4	**Date Sampled:**	08/26/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36416.D	1	08/29/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	0.183	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	117%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TS-SW-04-20160826
Lab Sample ID: D86229-4
Matrix: AQ - Surface Water
Method: SW846-8015B SW846 3510C
Project: Manweiler Tanker

Date Sampled: 08/26/16
Date Received: 08/29/16
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43652.D	1	08/30/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	3.27	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	72%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-05-20160826		
Lab Sample ID:	D86229-5	**Date Sampled:**	08/26/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36417.D	1	08/29/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TS-SW-05-20160826
Lab Sample ID: D86229-5
Matrix: AQ - Surface Water
Method: SW846-8015B SW846 3510C
Project: Manweiler Tanker

Date Sampled: 08/26/16
Date Received: 08/29/16
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43654.D	1	08/31/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	65%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-06-20160826		
Lab Sample ID:	D86229-6	**Date Sampled:**	08/26/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36418.D	1	08/29/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TS-SW-06-20160826
Lab Sample ID: D86229-6
Matrix: AQ - Surface Water
Method: SW846-8015B SW846 3510C
Project: Manweiler Tanker

Date Sampled: 08/26/16
Date Received: 08/29/16
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43656.D	1	08/31/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	60%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-07-20160826		
Lab Sample ID:	D86229-7	**Date Sampled:**	08/26/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36419.D	1	08/29/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TS-SW-07-20160826
Lab Sample ID: D86229-7
Matrix: AQ - Surface Water
Method: SW846-8015B SW846 3510C
Project: Manweiler Tanker

Date Sampled: 08/26/16
Date Received: 08/29/16
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43658.D	1	08/31/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	69%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-08-20160827		
Lab Sample ID:	D86229-8	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36420.D	1	08/29/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TS-SW-08-20160827
Lab Sample ID: D86229-8
Matrix: AQ - Surface Water
Method: SW846-8015B SW846 3510C
Project: Manweiler Tanker

Date Sampled: 08/27/16
Date Received: 08/29/16
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43660.D	1	08/31/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	0.256	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	72%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-07-20160827		
Lab Sample ID:	D86229-9	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36421.D	1	08/29/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TS-SW-07-20160827
Lab Sample ID: D86229-9
Matrix: AQ - Surface Water
Method: SW846-8015B SW846 3510C
Project: Manweiler Tanker

Date Sampled: 08/27/16
Date Received: 08/29/16
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43662.D	1	08/31/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	63%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-07-20160827-02		
Lab Sample ID:	D86229-10	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36422.D	1	08/29/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-07-20160827-02		
Lab Sample ID:	D86229-10	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43664.D	1	08/31/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	0.343	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	70%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-06-20160827		
Lab Sample ID:	D86229-11	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36423.D	1	08/29/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-06-20160827		
Lab Sample ID:	D86229-11	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43666.D	1	08/31/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	71%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-B2-20160827		
Lab Sample ID:	D86229-12	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36426.D	1	08/30/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	99%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-B2-20160827		
Lab Sample ID:	D86229-12	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43649.D	1	08/30/16	GN	08/30/16	OP14012	GFI1915
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	72%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-05-20160827		
Lab Sample ID:	D86229-13	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36440.D	1	08/30/16	AK	n/a	n/a	GGB1861
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-05-20160827		
Lab Sample ID:	D86229-13	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43642.D	1	08/30/16	GN	08/30/16	OP14012	GFI1916
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	76%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-05-20160827-D		
Lab Sample ID:	D86229-14	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36428.D	1	08/30/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-05-20160827-D		
Lab Sample ID:	D86229-14	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43651.D	1	08/30/16	GN	08/30/16	OP14012	GFI1915
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	70%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-04-20160827		
Lab Sample ID:	D86229-15	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36429.D	1	08/30/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	0.0538	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	108%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-04-20160827		
Lab Sample ID:	D86229-15	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43653.D	1	08/30/16	GN	08/30/16	OP14012	GFI1915
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	64%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-03-20160827		
Lab Sample ID:	D86229-16	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36430.D	1	08/30/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	104%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-03-20160827		
Lab Sample ID:	D86229-16	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43655.D	1	08/31/16	GN	08/30/16	OP14012	GFI1915
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	63%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-03-20160827-D		
Lab Sample ID:	D86229-17	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36431.D	1	08/30/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	0.0552	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	108%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-03-20160827-D		
Lab Sample ID:	D86229-17	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43657.D	1	08/31/16	GN	08/30/16	OP14012	GFI1915
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	75%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-01-20160827		
Lab Sample ID:	D86229-18	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36432.D	1	08/30/16	AK	n/a	n/a	GGB1860
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	0.182	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	105%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-01-20160827		
Lab Sample ID:	D86229-18	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43659.D	1	08/31/16	GN	08/30/16	OP14012	GFI1915
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	0.226	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	66%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-B1-20160827		
Lab Sample ID:	D86229-19	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846 8015B	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GB36441.D	1	08/30/16	AK	n/a	n/a	GGB1861
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	101%		60-140%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TS-SW-B1-20160827		
Lab Sample ID:	D86229-19	**Date Sampled:**	08/27/16
Matrix:	AQ - Surface Water	**Date Received:**	08/29/16
Method:	SW846-8015B SW846 3510C	**Percent Solids:**	n/a
Project:	Manweiler Tanker		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FI43661.D	1	08/31/16	GN	08/30/16	OP14012	GFI1915
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	71%		11-142%

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

PAGE 1 OF 2

SGS ACCUTEST

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX. 303-425-6854
www.accutest.com

FED-EX Tracking #: | Bottle Order Control #:
SGS Accutest Quote #: | SGS Accutest Job #: D86229

Client / Reporting Information

Company Name: Weston Solutions
Street Address: 1435 Garrison St.
City: Lakewood, CO 80215
Project Contact: Eric Sandusky
Phone #: 303-729-6132
Sampler(s) Name(s): Ellie Kastner/Eric Sandusky

Project Information

Project Name: Manweiler Tanker
Street: Suite 100
City: State:
Project #:
Client Purchase Order #:
Project Manager: eric.sandusky@westonsolutions.com

Billing Information (if different from Report to)

Company Name:
Street Address:
City:
Attention:

Requested Analysis (see TEST CODE sheet)

DRO, GRO

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	LAB USE ONLY
	TS-SW-01-20160826		8/26/16	1150	LK	AQU	5	4				1				01
	TS-SW-02-20160826			1220		SW	6	4				2				02
	TS-SW-03-20160826			1440												03
	TS-SW-04-20160826			1610												04
	TS-SW-05-20160826			1805												05
	TS-SW-06-20160826			2015												06
	TS-SW-07-20160826			1905												07
	~~TS-SW-08~~ TS-SW-08-20160827		8/27/16	0750												08
	TS-SW-09-20160827			0845												09
	TS-SW-07-20160827-D2			0900												10
	TS-SW-06-20160827			1055												11
	TS-SW-02-20160827			1130												12

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [x] 1 Day Emergency
- [ ]

Emergency & Rush T/A data available VIA Labtink

Approved By (SGS Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [ ] Report by PDF
- [x] EDD Format Scribe

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		8/29 1538	1	2	8/29/16 1600	2
3	Relinquished by Sampler:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 3	Custody Seal #	[x] Intact [ ] Not intact	Preserved where applicable: [ ] On Ice: [ ] Cooler Temp. 5.3

QA065-00 Rev. 1 1/21/2016

D86229: Chain of Custody
Page 1 of 3

CHAIN OF CUSTODY

PAGE 2 OF 2

SGS ACCUTEST

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking #

Bottle Order Control #

SGS Accutest Quote #

SGS Accutest Job # D86229

Client / Reporting Information

Company Name

Street Address

City

Project Contact

Phone #

Sampler(s) Name(s)

Project Information

Project Name: Manweiler Tanker

Street

City State

Project #

Client Purchase Order #

Project Manager

Billing Information (if different from Report to)

Company Name

Street Address

City

Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB - Rinse Blank
TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	EnCore	DRO	GRO	LAB USE ONLY
	TS-SW-05-20160827		8/27/16	1116	ER	SW	6					4				2	2	13
	TS-SW-05-20160827-D			1116	ER		3					2				2	2	14
	TS-SW-04-20160827			1135	ES		6	4				2				2	2	15
	TS-SW-03-20160827			1027			6	4				2				2	2	16
	TS-SW-03-20160827-D			1026			6	4				2						17
	TS-SW-01-20160827			0935			1	1										18
	TS-SW-B1-20160827			1052			1					1						19

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [x] 1 Day Emergency
- [ ]

Approved By (SGS Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [ ] Report by PDF
- [ ] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler: 1	Date Time:	Received By: 1	Relinquished By: 2	Date Time: 8/29/16 1629	Received By: 2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 3	Custody Seal #	[ ] Intact [ ] Not Intact	Preserved where applicable [ ] On Ice [ ] Cooler Temp.

D86229: Chain of Custody
Page 2 of 3

SGS Accutest Sample Receipt Summary

Job Number: D86229 **Client:** WESTON **Project:** MANWEILER TANK

Date / Time Received: 8/29/2016 4:20:00 PM **Delivery Method:** **Airbill #'s:** hd

Cooler Temps (Initial/Adjusted): #1: (5.3/5.3);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun;		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Comments

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

GC Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1860-MB	GB36402.D	1	08/29/16	AK	n/a	n/a	GGB1860

The QC reported here applies to the following samples: **Method:** SW846 8015B

D86229-2, D86229-3, D86229-4, D86229-5, D86229-6, D86229-7, D86229-8, D86229-9, D86229-10, D86229-11, D86229-12, D86229-14, D86229-15, D86229-16, D86229-17, D86229-18

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	97%	60-140%

Method Blank Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1861-MB	GB36437.D	1	08/30/16	AK	n/a	n/a	GGB1861

The QC reported here applies to the following samples: **Method:** SW846 8015B

D86229-13, D86229-19

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.050	0.050	mg/l	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	96%	60-140%

Method Blank Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA1739-MB	GA34488.D	1	08/30/16	AK	n/a	n/a	GGA1739

The QC reported here applies to the following samples: **Method:** SW846 8015B

D86229-1A

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	10	5.0	mg/kg	

CAS No.	Surrogate Recoveries		Limits
120-82-1	1,2,4-Trichlorobenzene	97%	60-140%

Blank Spike Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1860-BS	GB36403.D	1	08/29/16	AK	n/a	n/a	GGB1860

The QC reported here applies to the following samples: **Method:** SW846 8015B

D86229-2, D86229-3, D86229-4, D86229-5, D86229-6, D86229-7, D86229-8, D86229-9, D86229-10, D86229-11, D86229-12, D86229-14, D86229-15, D86229-16, D86229-17, D86229-18

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	2.14	97	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	102%	60-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGB1861-BS	GB36438.D	1	08/30/16	AK	n/a	n/a	GGB1861

The QC reported here applies to the following samples: **Method:** SW846 8015B

D86229-13, D86229-19

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-GRO (C6-C10)	2.2	2.21	100	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	100%	60-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GGA1739-BS	GA34489.D	1	08/30/16	AK	n/a	n/a	GGA1739

The QC reported here applies to the following samples: **Method:** SW846 8015B

D86229-1A

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-GRO (C6-C10)	110	115	105	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
120-82-1	1,2,4-Trichlorobenzene	105%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D86338-17MS	GB36410.D	1	08/29/16	AK	n/a	n/a	GGB1860
D86338-17MSD	GB36411.D	1	08/29/16	AK	n/a	n/a	GGB1860
D86338-17	GB36409.D	1	08/29/16	AK	n/a	n/a	GGB1860

The QC reported here applies to the following samples: **Method:** SW846 8015B

D86229-2, D86229-3, D86229-4, D86229-5, D86229-6, D86229-7, D86229-8, D86229-9, D86229-10, D86229-11, D86229-12, D86229-14, D86229-15, D86229-16, D86229-17, D86229-18

CAS No.	Compound	D86338-17 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	0.0602		2.2	2.00	88	2.2	1.78	78	12	64-138/30

CAS No.	Surrogate Recoveries	MS	MSD	D86338-17	Limits
120-82-1	1,2,4-Trichlorobenzene	94%	95%	93%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D86106-2MS	GA34491.D	1	08/30/16	AK	n/a	n/a	GGA1739
D86106-2MSD	GA34492.D	1	08/30/16	AK	n/a	n/a	GGA1739
D86106-2	GA34490.D	1	08/30/16	AK	n/a	n/a	GGA1739

The QC reported here applies to the following samples: **Method:** SW846 8015B

D86229-1A

CAS No.	Compound	D86106-2 mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		150	157	104	150	159	106	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D86106-2	Limits
120-82-1	1,2,4-Trichlorobenzene	104%	103%	94%	60-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D86229-13MS	GB36442.D	1	08/30/16	AK	n/a	n/a	GGB1861
D86229-13MSD	GB36443.D	1	08/30/16	AK	n/a	n/a	GGB1861
D86229-13	GB36440.D	1	08/30/16	AK	n/a	n/a	GGB1861

The QC reported here applies to the following samples: **Method:** SW846 8015B

D86229-13, D86229-19

CAS No.	Compound	D86229-13 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	ND		2.2	1.86	85	2.2	2.78	126	40* [a]	64-138/30

CAS No.	Surrogate Recoveries	MS	MSD	D86229-13	Limits
120-82-1	1,2,4-Trichlorobenzene	100%	105%	98%	60-140%

(a) High RPD due to possible sample nonhomogeneity.

* = Outside of Control Limits.

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14009-MB	FI43635.D	1	08/30/16	GN	08/30/16	OP14009	GFI1915

The QC reported here applies to the following samples: **Method:** SW846-8015B

D86229-1A

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	2000	1900	mg/kg	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	81%	41-134%

Method Blank Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14012-MB	FI43634.D	1	08/30/16	GN	08/30/16	OP14012	GFI1916

The QC reported here applies to the following samples: **Method:** SW846-8015B

D86229-2, D86229-3, D86229-4, D86229-5, D86229-6, D86229-7, D86229-8, D86229-9, D86229-10, D86229-11, D86229-12, D86229-13, D86229-14, D86229-15, D86229-16, D86229-17, D86229-18, D86229-19

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	51%	11-142%

Blank Spike Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14009-BS	FI43637.D	1	08/30/16	GN	08/30/16	OP14009	GFI1915

The QC reported here applies to the following samples: **Method:** SW846-8015B

D86229-1A

CAS No.	Compound	Spike mg/kg	BSP mg/kg	BSP %	Limits
	TPH-DRO (C10-C28)	5000	2820	56	35-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	78%	41-134%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14012-BS	FI43636.D	1	08/30/16	GN	08/30/16	OP14012	GFI1916

The QC reported here applies to the following samples: **Method:** SW846-8015B

D86229-2, D86229-3, D86229-4, D86229-5, D86229-6, D86229-7, D86229-8, D86229-9, D86229-10, D86229-11, D86229-12, D86229-13, D86229-14, D86229-15, D86229-16, D86229-17, D86229-18, D86229-19

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	5	2.49	50	22-130

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	64%	11-142%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14012-MS	FI43638.D	1	08/30/16	GN	08/30/16	OP14012	GFI1916
OP14012-MSD	FI43640.D	1	08/30/16	GN	08/30/16	OP14012	GFI1916
D86229-13	FI43642.D	1	08/30/16	GN	08/30/16	OP14012	GFI1916

The QC reported here applies to the following samples: **Method:** SW846-8015B

D86229-2, D86229-3, D86229-4, D86229-5, D86229-6, D86229-7, D86229-8, D86229-9, D86229-10, D86229-11, D86229-12, D86229-13, D86229-14, D86229-15, D86229-16, D86229-17, D86229-18, D86229-19

CAS No.	Compound	D86229-13 mg/l	Q	Spike mg/l	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		5	2.77	55	5	2.80	56	1	20-130/30

CAS No.	Surrogate Recoveries	MS	MSD	D86229-13	Limits
84-15-1	o-Terphenyl	78%	77%	76%	11-142%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D86229
Account: WESTCOL Weston Solutions, Inc.
Project: Manweiler Tanker

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP14009-MS	FI43675.D	10	08/31/16	GN	08/30/16	OP14009	GFI1917
OP14009-MSD	FI43677.D	10	08/31/16	GN	08/30/16	OP14009	GFI1917
D86229-1A	FI43679.D	10	08/31/16	GN	08/30/16	OP14009	GFI1917

The QC reported here applies to the following samples: **Method:** SW846-8015B

D86229-1A

CAS No.	Compound	D86229-1A mg/kg	Q	Spike mg/kg	MS mg/kg	MS %	Spike mg/kg	MSD mg/kg	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	560000		5000	510000	-1000* [a]	5000	558000	-40* [a]	9	10-171/30

CAS No.	Surrogate Recoveries	MS	MSD	D86229-1A	Limits
84-15-1	o-Terphenyl	189%* [b]	211%* [b]	209%* [b]	41-134%

(a) Outside control limits due to high level in sample relative to spike amount.
(b) Outside control limits due to dilution.

* = Outside of Control Limits.